

Economic Valuation of Increasing Queensland’s Protected Areas from 8.24% to 17% Land Area Estate

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¹Department of Environment and Science (DES). (2020). Queensland Estate Statistics as at 27 March 2020.
² Driml, S., Brown R., P., C., Moreno Silva, C. (2020). *Estimating the Value of National Parks to the Queensland Economy*. School of Economics Discussion Paper Series 636. School of Economics, The University of Queensland.
³ DES. 2020. Queensland’s Protected Area Strategy 2020–2030: Protecting our world-class natural and cultural values. Brisbane, Department of Environment and Science, Queensland Government.

Introduction

The future of Australia’s protected areas is at a crossroads, particularly in Queensland, which has the lowest percentage of area protected of all the states and territories at 8.24%¹. Protected areas not only preserve biodiversity and safeguard against environmental threats, they also provide extensive economic benefits. This study provides an initial overview of the potential value that increasing the protected area estate in Queensland could provide. A recent study² estimates current tourism value in the form of National Park Generated Spending (NPGS). This report presents possible tourism benefits that would arise as a result of extending the protected area to 17% as promised in the Queensland Protected Area Strategy 2020-2030³.

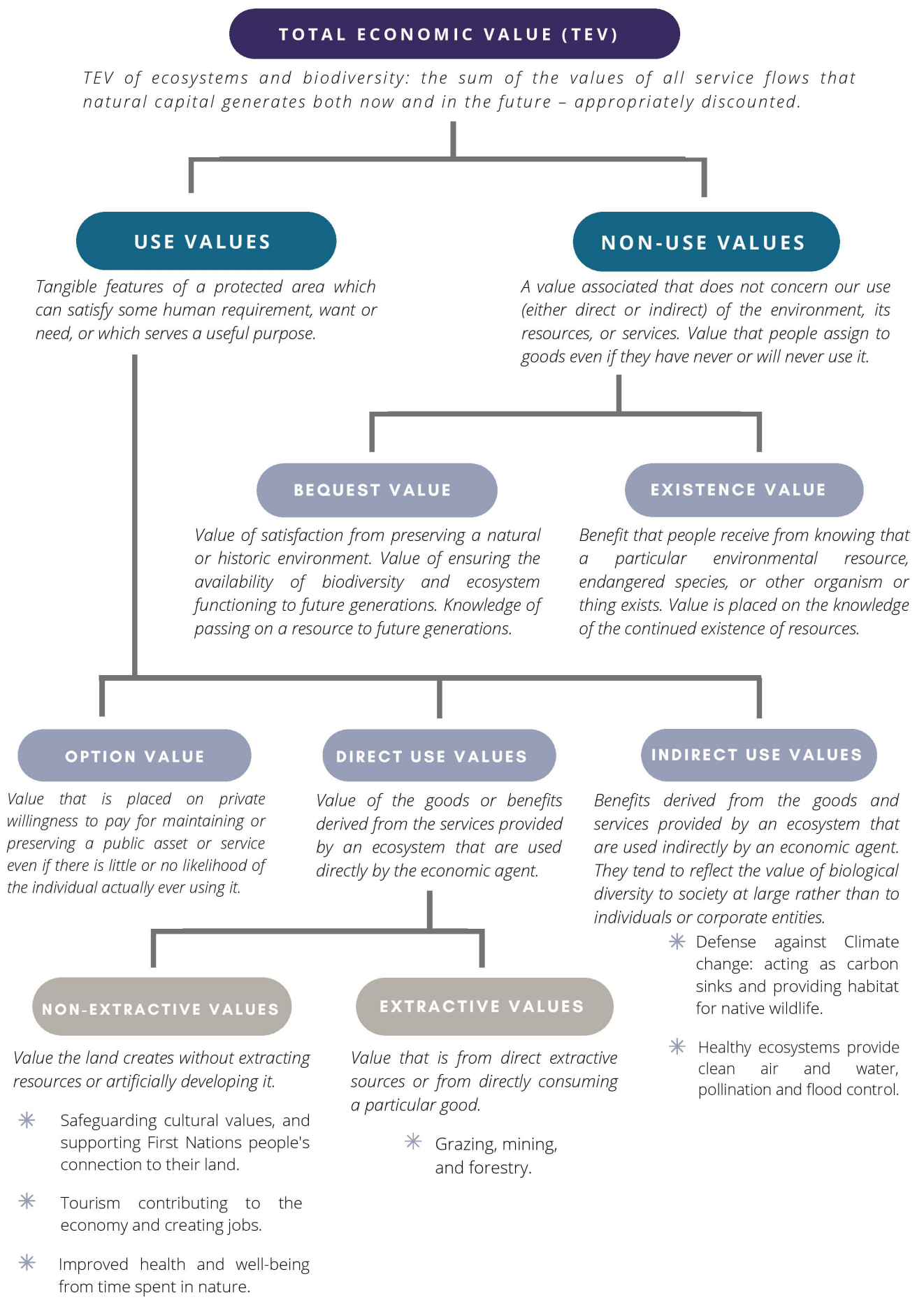


Figure 1: Identification of Total Economic Value of Ecosystem Services with examples of value contributed by protected areas.

Method

Future benefits were forecasted based on current measures of benefits derived from national parks and extrapolating those figures into the future in accordance with Queensland’s protected area goals and strategic timeframe.

1. The 2018 value of NPGS is divided by the area of Queensland national parks as of December 2018 to reveal an approximation of NPGS per hectare.
2. The value of NPGS per hectare in 2018 is then adjusted for inflation to reveal the value in 2020 dollars using an average annual inflation rate of 0.2% in accordance with the Reserve Bank of Australia.
3. Three scenarios are set up to demonstrate various strategies of national park acquisition for achieving the 17% target. If 25% of the increased protected land area is dedicated to national parks and the other 75% allocated to other protected area types, versus 50% to national parks, versus 75% to national parks.
4. The proportion of additional protected area that would be national parks for each scenario is multiplied by the NPGS per hectare to reveal the NPGS that would be received each year.
5. To determine the present value of NPGS that would occur from 2020 to 2030 for each scenario, the **Present value of a finite annuity** was determined using the following formula:

$$V_0 = \frac{a((1+r)^t - 1)}{r(1+r)^t}$$

V_0 is a present value (\$)
 r is the discount rate (%)
 a is a constant annual cost or revenue (\$)
 t is the total investment period (years)

Three different discount rates are calculated for each scenario to present a range of potential values.

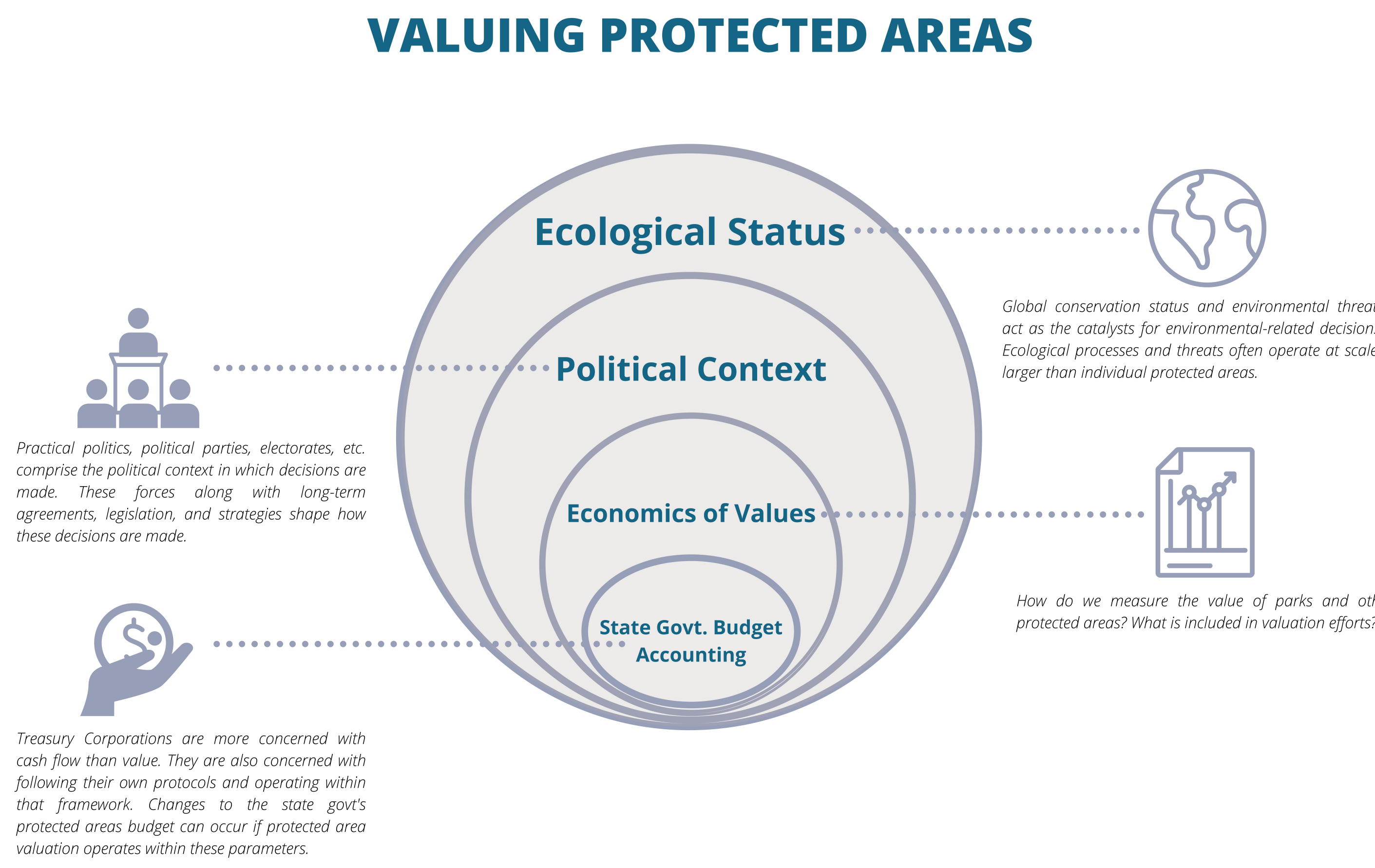


Figure 2: The economic value of protected areas largely influence how budgets are to be set for these areas. However, these budgets are designed following their own concerns and protocols. Economic valuation is one component of and is determined by the political processes in which it exists. These all exist within the scale of ecological processes and status.

Results

If Queensland increases its protected areas to 17% of the state, the additional tourism value gained from national parks could be up to \$37.961 billion.

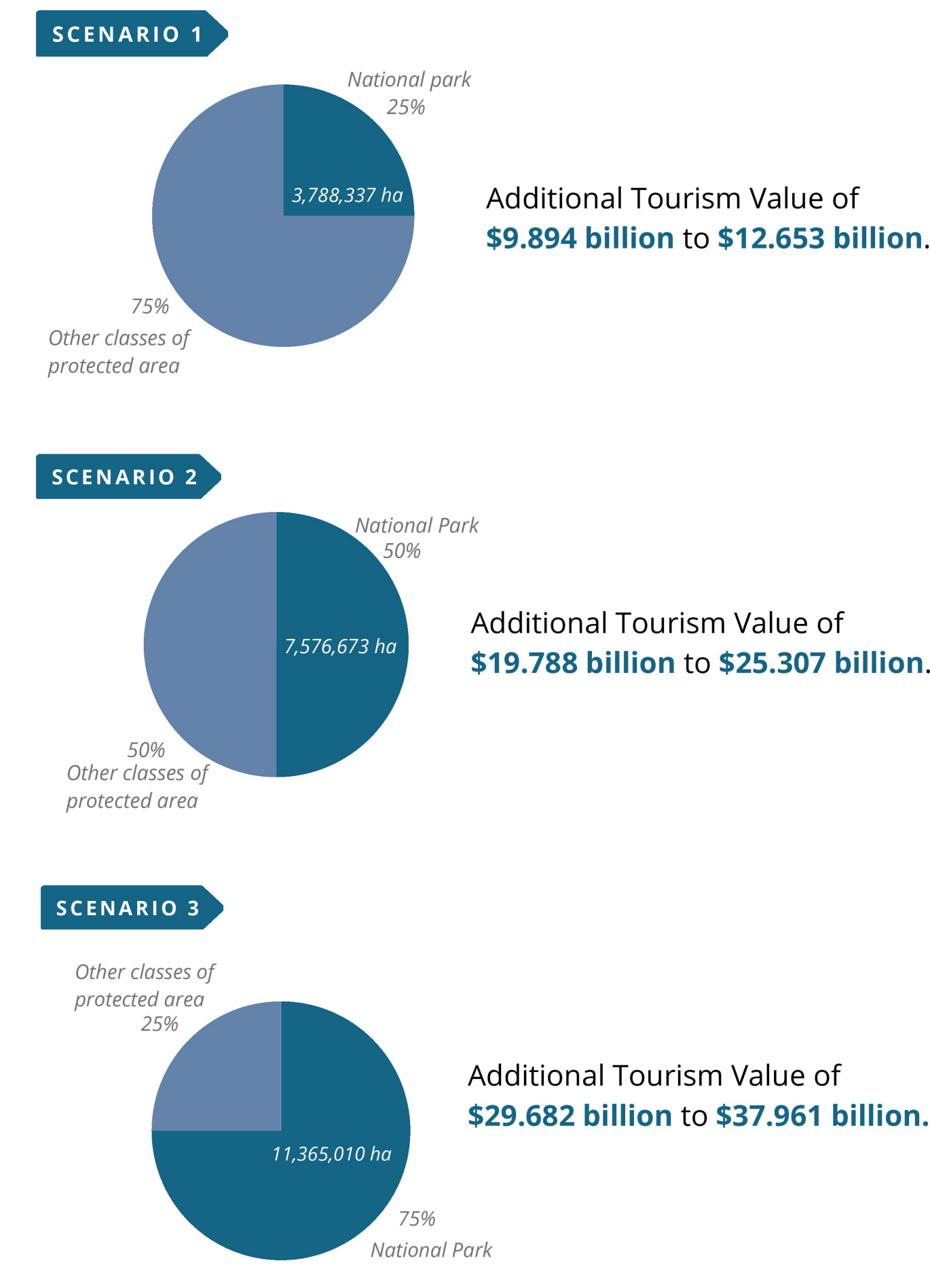


Figure 3: The additional value that would be received from national park generated spending under three strategies of increasing Queensland’s protected areas to 17% from 2020-2030.

What research needs to be done?

TOTAL ECONOMIC VALUATION

There are many conceptual and logistical problems inherent in producing any estimate of ecosystem services and the protected areas that produce them. An ideal valuation of benefits would include all values as outlined in Figure 1.

ANALYSIS OF SUPPLY AND DEMAND

There currently exists a lack of no research on whether the demand for national parks is fixed or not. Research should be done on the demand for future national parks to determine how evaluations of current benefits from national parks can be properly transferred to apply to future national parks.

VISITOR SPENDING REGRESSION ANALYSIS

To aid policy makers in determining which potential lands would yield the best outcome in visitor spending, a regression analysis should be conducted to determine the impact of certain variables on visitor spending in national parks.

Conclusions

If 25% of the additional protected land area is dedicated to national parks and the other 75% allocated to other protected area types (such as nature refuges and special wildlife reserves), the additional value from visitor spending would likely be between \$9.894 billion to \$12.653 billion. If 50% of the additional protected land area is dedicated to national parks, the additional value from visitor spending would be between \$19.788 billion to \$25.307 billion. 75% of the additional protected land area is dedicated to national parks, the additional value from visitor spending would be between \$29.682 billion to \$37.961 billion. As of 2020, of the total 14,267,670 hectares of protected area in Queensland, roughly 50% of the land area falls under national parks (not including scientific and Cape York Peninsula Aboriginal Land) so Scenario 2 is most indicative of current allocation trends. Increasing protected are. There is a need for comprehensive and consistent economic valuation of protected areas in Queensland as they clearly contribute value.